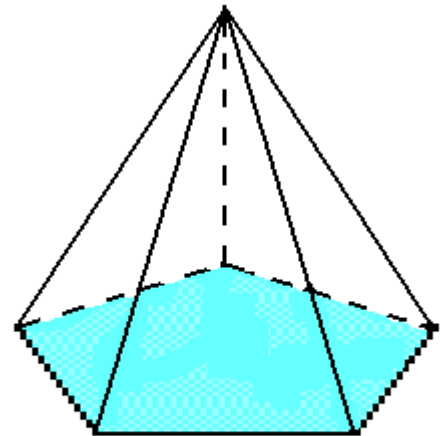


Geometry 12.1 Notes: Exploring Solids

(pp 719-722)

Polyhedron



Faces

Lateral Face

Base

Edge

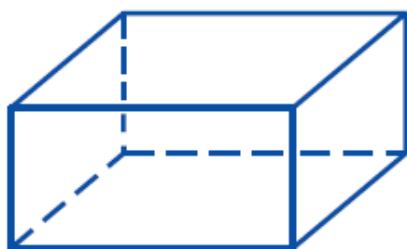
Vertex



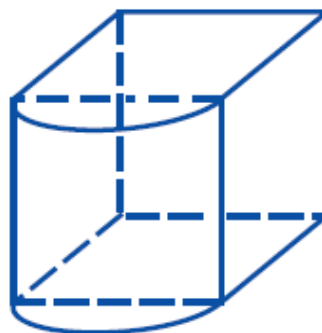
Geometry 12.1 Notes: Exploring Solids (pp 719-722)

Examples: Decide whether the solid is a polyhedron. If so, state the number of faces, vertices, and edges of the polyhedron.

1.



2.



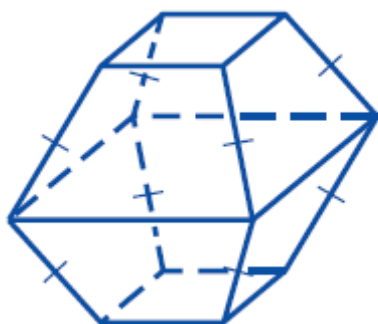
Regular Polyhedron

Convex Polyhedron

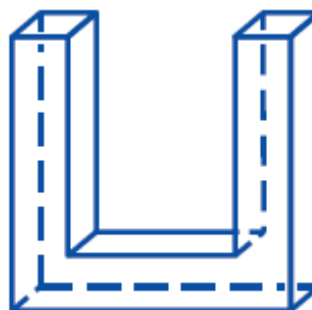
Concave Polyhedron

Example: Is the decahedron convex? Is it regular?

3.

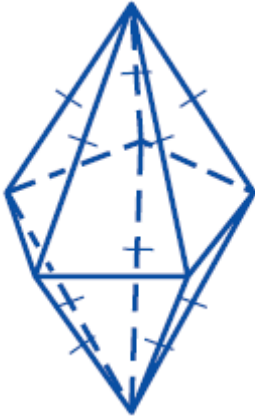


4.



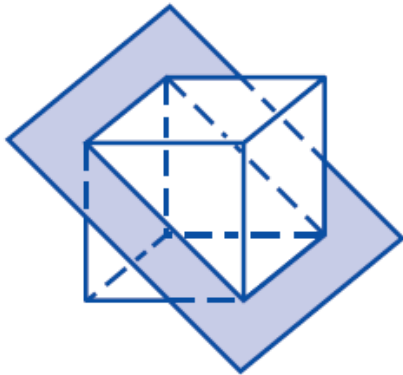
Geometry 12.1 Notes: Exploring Solids (pp 719-722)

5. Guided Practice: State the number of faces, vertices, and edges of the polyhedron. Is it convex? Is it regular?

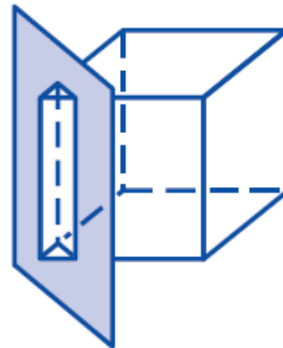


Examples: Describe the shape formed by the intersection of the plane and the cube.

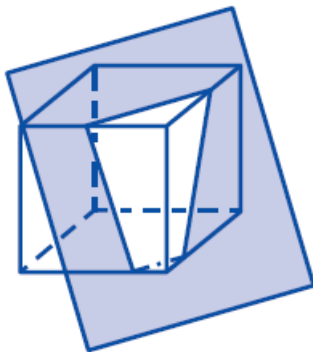
6.



7.



8.



Geometry 12.1 Notes: Exploring Solids (pp 719-722)

Platonic Solids

Euler's Theorem

9. Example: A solid has 10 faces: 4 triangles, 1 square, 4 hexagons, and 1 octagon. How many vertices does the solid have?

10. Guided Practice: A solid has 11 faces: 5 quadrilaterals and 6 pentagons. How many vertices does the solid have?

Geometry 12.1 Notes: Exploring Solids (pp 719-722)

Examples.

11. Some quartz crystals are pointed on both ends, and have 14 vertices and 30 edges. If you plan to put a label on one of the faces of a crystal, how many faces do you have to choose from?

12. A paper model of a geodesic dome is composed of 180 triangular faces. How many vertices does it have?

Guided Practice.

13. A *snub dodecahedron* has 12 pentagonal faces. The rest of its 92 faces are triangles. How many vertices does the solid have?

14. What makes a polyhedron a regular polyhedron?

15. How can you find the number of vertices of a regular polyhedron if you know the number of faces and edges?